



The Interstate at 50

REGISTRATION OF PROFESSIONAL ENGINEERS AID LAND SURVEYORS (partial reprint of paper presented)

Report to the Fourteenth County Engineers' Conference

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All fifty of the United States and the District of Columbia now have laws pertaining to registration of engineers, land surveyors and architects and have boards to administer those laws. Canada, the Canal Zone and Puerto Rico as well as several foreign countries also have similar laws. Iowa was among the first of the states to see the necessity for and to take positive steps to enact such legislation. The Iowa law was originally put into effect on July 4, 1919. Prior to 1919 only Florida, Louisiana and Wyoming had engineering registration laws.

In the year 1919—besides Iowa—Colorado, Idaho, Michigan, Nevada, and Oregon adopted their registration laws. The District of Columbia, adopting its registration laws in the year 1950, was the last of the United States group to take the step. So we see that Iowa was lagging the first nine states to take such measures. The Iowa law has been used by many states in the development of their own laws.

The laws of our various states, while they have the same general intents and purposes, do differ somewhat in their wordings, applications and interpretations as may well be expected when considering the fact that each state law was developed by its own individual group of people and passed through its own state legislature. The National Council of State Boards of Engineering Examiners (NCSBEE), an organization composed of all members of all State Boards of Registration for Engineers and Land Surveyors, has spent several years and has gone through a great deal of discussion in the development of a so-called "Model Law" for registration of engineers and land surveyors. Their final draft was adopted at their meeting at Portland, Oregon, in August of 1960. The NCSBEE recognizes that registration laws are states' rights and presents its model law only as an example for various state legislatures to review when considering revisions to their own state laws, in the hope that by so doing, more uniformity will eventually be obtained in all state laws.

But you men are undoubtedly more concerned at this time with Iowa registration than with that in other states so I shall confine most of my remarks to affairs of our own state.

The 1958 Code of Iowa in Chapter No. 114 gives us the following definitions: "The term "Professional Engineer" as used in this chapter shall mean a person, who, by reason of his knowledge of mathematics, the physical sciences and the principles of engineering, acquired by professional education and/or practical experience, is qualified to engage in engineering practice as hereinafter defined. The practice of "Professional Engineering" within the meaning and intent of this chapter includes any professional service, such as consultation, investigation, evaluation, planning, designing or responsible supervision of construction in connection with structures, buildings, equipment, processes, works or projects, wherein the public welfare, or the safeguarding of life, health or property is or may be concerned or involved, when such professional service requires the application of engineering principles and data. The term "Land Surveyor" as used in the chapter shall mean a person who engages in the practice of land surveying as hereinafter defined.

The practice of Land Surveying within the meaning and intent of this chapter includes surveying of areas for their correct termination and description and for conveyancing, or for the establishment or re-establishment of land boundaries and the platting of lands and subdivisions thereof.

The Code states in the first section of Chapter 114, “No person shall practice professional engineering or land surveying in the State unless he be a registered professional engineer or a registered land surveyor as required by this Chapter, except as permitted by the last section thereof. The exceptions mentioned in the last section pertain to engineers employed by private corporations doing work solely for their corporation, U. S. Government employees, and a few others.

The Board of Engineering Examiners takes the position that a man is not a professional engineer or a land surveyor unless he is licensed by the Board of Engineering Examiners to practice professional engineering or land surveying: whichever the case may be. The Iowa law relating to engineering and land surveying sufficiently ties the terms “professional engineer” and “land surveyor” to its beginning statement, “No person shall practice professional engineering or land surveying in the State unless he be a registered professional engineer or a registered land surveyor as provided in this chapter, and to support the contention that a man is not a professional engineer or land surveyor unless he is licensed and registered as such.”

The general requirements for registration, as currently stated in the law, are found in Section 114.14 which I would like to repeat here in its entirety in order to give the proper wording and meaning to this all important section of the Code. The following shall be considered as minimum evidence satisfactory to the Board that the applicant is qualified for registration as a professional engineer, or land surveyor, respectively: to-wit:

1. As a professional engineer:

- a. Graduation from an approved course in engineering of four years or more in an approved school or college; and a specific record of an additional four years or more of practical experience in engineering work of a character satisfactory to the Board.
- b. Successfully passing a written, or written and oral: examination designed to show knowledge and skill approximating that attained through graduation from an approved four-year engineering course; and a specific record of eight years or more of practical experience in engineering work.

2. As a land surveyor:

- a. Graduation from an approved course in surveying in an approved school or college; and an additional four years or more of practical and experience in land surveying work.
- b. Successfully passing a written, or written and oral, examination in surveying prescribed by the Board; and a specific record of eight years or more of practical experience in land survey work. The practical experience required in this section may be obtained under the exemption provisions of Section 114.21.

“In considering the qualifications of applicants, responsible charge of engineering teaching may be construed as responsible charge of engineering work. The satisfactory completion of each year of an approved course in engineering in an approved school or college: without graduations shall be considered as equivalent to a year of practical experience; provided, however, that no applicant shall receive credit for more than four years of practical experience because of educational qualifications.”

“Provided, that no person shall be eligible for registration as a professional engineer, or land surveyor, who is not of good character and reputation.”

In examining a man's qualifications for registration the Board is concerned only with minimum qualifications. We are not attempting to learn who is the best engineer or land surveyor. We are only interested in determining whether or not an applicant has necessary minimums qualifications to permit him to announce to the public that he is a professional engineer or land surveyor with the presumption that he has sufficient knowledge and experience to proceed in doing such work where public welfare may be involved. We would not expect a man with just eight years experience to be able to exercise judgment on a level with another man who may have had twenty or more years of good experience. Our law requires eight years of qualifying experience. The Board can not be more stringent. It is the Board's responsibility to establish that there have been eight years of qualifying experience in the case of each individual.

An applicant who has graduated from college after completing the approved course in engineering, is almost always given credit for four years of qualifying experience by education, regardless of the course of engineering he may have taken.

A man who has had some college training in a course other than engineering in which he may have had college mathematics including college algebra and trigonometry also some college physics and chemistry will also probably be given credit for some experience by reason of his education toward the eight years of qualifying experience required even though the course he may be taken was not engineering.

A trend is developing toward making it harder and harder for a man without a Bachelor of Science Degree in engineering to become registered as a professional engineer. Some states already deny consideration of any applicant who does not have a Bachelor of Science Degree in engineering. This is probably justified on a professional basis and is in keeping with denial of licenses to practice medicine and law without academic degrees in those respective professions. Here in Iowa, we still recognize practical experience in lieu of college training and are expecting to continue doing so. But where presently only four years practical experience are required in lieu of four years of college, an effort is underway to increase that experience requirement to ten years.